

REMARKS

Claims 1, 2, 5-12 and 15-20 are pending in this application. By this Amendment, claims 3, 4, 13 and 14 are cancelled without prejudice to or disclaimer of the subject matter contained therein, and claims 1, 11, 12 and 15-20 are amended. Claim 1 is amended to incorporate features from claims 3 and 4, claim 11 is amended to incorporate features from claims 13 and 14, and claims 12 and 15-20 are amended to correct claim dependencies. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

The Office Action rejects claims 1-20 under 35 U.S.C. §103(a) over U.S. Patent 5,863,105 to Sano in view of U.S. Patent 5,636,909 to Hirao *et al.* (hereinafter “Hirao”). This rejection is rendered moot with respect to claims 3, 4, 13 and 14, and is respectfully traversed with respect to the remaining claims.

Sano and Hirao do not teach or suggest a brake system for a vehicle, comprising a brake apparatus that applies braking force to each wheel of the vehicle, and a controller that controls the braking force applied to the wheel by controlling the brake apparatus so that an actual slip rate of the wheel matches a target slip rate, wherein the controller is adapted to: during a specific brake control mode in which the target slip rate is set so as to prevent the actual slip rate of the wheel from exceeding a reference value and therefore avoid locking the wheel, make a first correction to the target slip rate set in the brake control mode such that the actual yaw rate of the vehicle matches a target yaw rate, and ensure through an adjustment of the target slip rate, a provision of a greater longitudinal force on the wheel than that obtained with the target slip rate determined or would have been determined by the first correction if a reduction in braking force of the vehicle is expected, wherein the controller is further adapted to bring about the adjustment of the target slip rate by increasing the target slip rate determined by the first correction or by prohibiting the first correction, as recited in claim 1.

Nor do Sano and Hirao teach or suggest a method of controlling a brake apparatus for applying braking force to wheels of a vehicle, the method comprising: controlling the braking force applied from the brake apparatus to each wheel when an actual slip rate of the wheel has exceeded a reference value so that the actual slip rate matches an target slip rate and the wheel is thereby prevented from being locked, making a first correction to the target slip rate so that an actual yaw rate of the vehicle matches a target yaw rate, and ensuring through an adjustment of the target slip rate, a provision of a greater longitudinal force on the wheel than obtained with the target slip rate determined or would have been determined by the first correction if a reduction in braking force of the vehicle is expected, wherein the adjustment of the target slip rate is brought about by increasing the target slip rate determined by the first correction or by prohibiting the first correction, as recited in claim 11.

For example, the specification discloses various exemplary aspects of controlling a brake system by an ECU (10), such as shown in the flowchart in Fig. 6 and described in paragraphs [0085] – [0092]. During ABS control mode, the ECU calculates a target slip rate (S1) within the μ -peak region and a target yaw rate (S2). The ECU corrects the target slip rate (S3) if oversteering is determined. The ECU determines whether the braking force reduction condition is satisfied (S4). If so, the ECU performs either a second correction on the target slip rate, or prohibits the first correction on the target slip rate (S5) and then proceeds to determine the target slip rate (S6). If the reduction condition is not satisfied, the ECU proceeds to determine the target slip rate (S6).

Instead, Sano discloses a turn control apparatus. In particular, Sano teaches target slip correction under ABS control at step S703 for a target slip ratio $S_x(i)$ by a computing section 218 that computes a correction $Y_s(i)$ at step S719, and determines whether the status is in a pressure increase mode at step S720. If the status is valid, the computing section 218 increments the correction of the ratio by $Y_s(i)$ at step S721, but not otherwise. The

computing section 218 then determines whether the status is in a pressure decrease mode at step S722, and if so determines whether the turning-round inhibition flag is not set to “1” at step S723. In this case the ratio is decremented by the correction of $Y_s(i)$ at step S724, but this step is bypassed otherwise (col. 32, lines 34-55 and Figs. 35 and 41 of Sano).

Hirao does not compensate for the deficiencies of Sano. Instead, Hirao discloses a traction control system. In particular, Hirao teaches slip control means 61 that include correcting means 90, correction limiting means 91, actual yaw rate detecting means 92 and yaw rate calculating means 93. The correction limiting means 91 inhibit the correcting means 90 from making a steering-based correction when the turning angle is less than a predetermined value (col. 13, lines 34-46, col. 14, lines 14-25 and Fig. 2 of Hirao).

Further, Applicants assert that an artisan of ordinary skill would lack motivation to combine features related to the slip correction calculation of Sano with the inhabitation of steering-based correction of Hirao. Additionally, Sano and Hirao disclose turn control techniques, whereas Applicants’ claims are directed to brake control. Thus, the artisan of ordinary skill would lack motivation to combine these turn control teachings with any expectation of success towards providing advantages related to brake control. Applicants further assert that the Office Action has not established sufficient motivation for a *prima facie* case of obviousness. Even assuming that motivation to combine the applied references is established, the combination fails to teach or suggest Applicants’ claimed features.

A *prima facie* case of obviousness for a §103 rejection requires satisfaction of three basic criteria: there must be some suggestion or motivation either in the references or knowledge generally available to modify the references or combine reference teachings, a reasonable expectation of success, and the references must teach or suggest all the claim limitations (MPEP §706.02(j)). Applicants assert that the Office Action fails to satisfy these requirements with Sano and Hirao.

For at least these reasons, Applicants respectfully assert that the independent claims are now patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed, as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejection under 35 U.S.C. §103 be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Date: May 16, 2005

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